## LIST OF MA WRRC PUBLICATIONS

A-001 **A Survey and Evaluation of Small, Artificial Recreational Ponds in Central Massachusetts**. Eugene F. Zanella and Larry R. Scofield, 232 pp., 1968

A-002 The Ecology of the Young Fishes of the Weweantic River Estuary. Charles F. Cole, 15 pp., 1969 (PB-188 795)

A-005 **Development of Method for Increasing the Efficiency of Water Use in Cranberries.** John S. Norton, 16 pp., 1968

A-006 Relation of Sediment Load to Hydrological Characteristics of the Connecticut River Between Northfield and Springfield, Massachusetts. Miles O. Hayes, 20 pp., 1967

A-007 **The Ecological Significance of Allulolytic Bacteria in Quabbin Reservoir**. John T.Reynolds, 11 pp., 1968

A-008 Absorption of Pesticides on Earth Material. John H. akrt, 28 pp., 1968

A-010 Pesticide Occurrence, Concentration and Degradation in Free Water Systems. B.M. Zuckerman, 14 pp., 1968

A-011 **Chemical Effects of Bottom Deposits on Quality of Impounded Waters.** Tsuan Hua Feng, 33 pp., 1968

A-012 Thermodynamic Relationships within the System: Sediments-Sea-Air. Oliver T. Zajicek, 13 pp., 1968

A-013 The Effects of Climate Upon the Work Capacity and Cardiac and Opercular Cycles in Freshwater Fish. John L. Roberts, 3 pp., 1968

A-014 Preprints of Papers Delivered at the Conference on Economic Geology in Massachusetts. Oswald C. Farquhar, ed., 59 pp., 1966

A-015 **Sub-Surface Irrigation of Turf Areas Nozzle Design and Spacing.** Lester F. Whitney, 8 pp., 1968

A-016 **Small Watershed Storage Increase Using Low Dams.** Karl N. Hendrickson, 20 pp., 1967

A-017 **The Mechanics of Fluid Transport in Vegetation.** Denton B. Harris, 10 pp., 1968

A-018 Arrest of the Aging Process in Massachusetts Lakes Resulting from Man's Activity. John T. Reynolds and Warren Litsky, 64 pp., 1968

- A-020 Microbial Degradation of Organic Pollutants of Industrial Origin. Haim B. Gunner, 11 pp., 1970
- A-021 Optimum Utilization and Management of Water Bearing Formations Hydraulically Connected to a Stretch of the Connecticut River. Ward S. Motts, 21 pp., 1970
- A-027 Surface Waters of a Small City (Springfield, Massachusetts). John W. Brainerd, 8 pp., 1971
- A-028 Water Resources Potential of an Urban Estuary (Saugus River, Pines River, and Lynn Harbor Complex). John J. Cochrane, Constantine J. Gregory, and Gerald L. Aronson, 185 pp., 1970
- A-038 Effects of Water Diversion on Estuarine Fauna in the Merrimack River, Massachusetts. Charles F. Cole, 9 pp., 1972
- A-049 **Statistical Study of the Duckweed Rhizosphere as an Eco-Assay Tool.** Robert A. Coler, 8 pp., 1974
- NECD-1 **Proceedings: Water Rights Law Conference.** New England Water Center Directors, 115 pp., 1966
- NECD-2 **Proceedings: Water Resources Planning Conference I.** New England Water Center Directors, 105 pp., 1968
- NECD-3 **Proceedings: Water Resources Planning Conference II.** New England Water Center Directors, 300 pp., 1969
- NECD-4 **Proceedings: The New England Conference on River Diversions.** New England Water Center Directors, 162 pp., 1971
- NECD-5 Conference Proceedings: Interaction of Land Use Planning and Regional Water Quality Management. Edward R. Kaynor, ed., New England Water Center Directors, 101 pp., 1974
- No. 2 Excerpts from the 1967 Annual Report of the Center. Bernard B. Berger, ed., 23 pp., 1967
- No. 3 **Proceedings of the Water Resources Research Symposium.** Bernard B. Berger, ed., 161 pp., 1967
- No. 4 Community Leader Attitudes on Water Pollution Abatement in Selected Massachusetts Communities on the Connecticut River. Robert A. Shanley, 16 pp., 1968

- No. 5 Yield of Streams in Massachusetts. George R. Higgins, 175 pp., 1967
- No. 6 Hydrological Studies in Massachusetts. George R. Higgins, 81 pp., 1968
- No. 7 **The Occurrence and Characteristics of Ground Water Contamination in Massachusetts.** Ward S. Motts and Marvin Saines, 70 pp., 1969 (PB-205 704)
- No. 8 Excerpts from the 1968 Annual Report. Bernard B. Berger, ed., 29 pp., 1968
- No. 9 **Vertical and Horizontal Distribution of Phytoplankton in Quabbin Reservoir.** Paul A. Erikson and John T. Reynolds, 45 pp., 1969
- No. 10 **Inventory of Ponds, Lakes and Reservoirs of Massachusetts.** James A. McCann, ed., (includes the following volumes):

Lake bathymetric maps are available separately. Contact the Water Resources Research Center (413 545-2842) or visit the MassWildlife web page.

- 10-1 ...Barnstable County. James A. McCann, 102 pp., 1969
- 10-2 ...Berkshire and Franklin Counties. James A. McCann and Leo M. Daly, 133, pp. (no date)
- 10-3 **...Essex County.** James A. McCann, John B. Dixon, and Robert W. Schleyer, 89 pp., 1972
- 10-4 ...Hampshire and Hampden Counties. James A. McCann and Leo M. Daly, 103 pp., 1972
- 10-5 ...Plymouth County. James A. McCann, George E. Wood and Edward E. Kraus, 114 pp., 1972
- 10-6 ... Worcester County. James A. McCann, Herman J. Covey, Robert P. Corrinet, and Paul E. Ostrowski, 181 pp., 1972
- 10-7 ...Middlesex County. James A. McCann, John B. Dixon, and Robert W. Schleyer, 124 pp., 1972
- 10-8 ...Norfolk and Suffolk Counties. James A. McCann, John B. Dixon, and Robert W. Schleyer, 87 pp., 1972
- 10-9 ...Bristol, Dukes and Nantucket Counties. James A. McCann, George E. Wood, and Edward E. Kraus, 91 pp., 1972
- No. 11 **The Role of Aquatic Vascular Plants in the Eutrophication Process of Selected Lakes in Western Massachusetts.** R.B. Livingston, and P.A. Bentley, 80 pp., 1970 (PB-197 115)
- No. 12 **Determination of the Feasibility of Removal of Algal Nutrients in Lake Water by Ion Exchange.** Oliver T. Zajicek, 64 pp., 1970 (PB-199 914)
- No. 13 Stochastic Population Dynamics for Regional Water Supply and Waste

- **Management Decision-Making.** Peter Meier, 207 pp., 1970
- No. 15 Institutional Patterns in Evolving Regional Programs for Water Resource Management. Irving Howards and Edward R. Kaynor, 237 pp., 1971
- No. 16 Control of Benthic Deposits in Lakes. Tsuan H. Feng, 194 pp., 1971
- No. 17 Mathematical Modeling of Nutrient Transport. Francis A. DiGiano, 37 pp., 1971
- No. 18 A Preliminary Study on the Utilization of Laminar Jet Flows for Removal of Benthic Deposits. Almon A. Shen and Joseph Colonell, 31 pp., 1971
- No. 19 Enhancement of Ecological and Aesthetic Values of Water Associated with Interstate Highways. Kenneth L. Bergstrom, Paul R. Dommel, James C. Moulton, and Walter E. Rogers, 114 pp., 1971
- No. 20 **Hydrologic Factors in the Determination of Watershed Yields.** George R. Higgins and J.M. Colonell, 125 pp., 1971 (PB-204 974)
- No. 20A **DIVERSE**, **A Fortran IV Program to Calculate Diversity Indices of Stream Bottom Organisms**. Joseph C. Mawson and Paul J. Godfrey, 23 pp., 1971
- No. 20B An Annotated Bibliography of the Masters Theses and Doctoral Dissertations on Water Resources and Their Uses, 1930-1970. James McCann and Gail G.Smith, 46 pp., 1971
- No. 21 Multi-Time Period, Facilities Location Problems: A Heuristic Algorithm with Applications to Waste Water Treatment Systems. Harjit S. Bhalla and Robert F. Rikkers, 87 pp., 1971
- No. 22 A Methodology for Determining Optimal Longitudinal Spacing of Effluent Discharges into a River. Ronald Webster Deacon and Richard J. Giglio, 131 pp., 1971
- FY 72-4 The Mill River and its Floodplain in Northampton and Williamsburg, Massachusetts: A Study of the Vascular Plant Flora, Vegetation, and the Presence of the Bacterial Family Pseudomonadaceae in Relation to Patterns of Land Use. Elizabeth D. Robinton and C. John Burk, 72 pp., 1972
- FY 72-5 **A Microbiotic Ecoassay for Environmental Pollutants.** Haim B. Gunner and Robert A. Coler, 17 pp., 1972
- FY 72-6 A Computerized Educational Program for the Application of the Management Sciences to Water Resources Management. Eugene E. Kaczka and George F. William, 25 pp., 1971

- FY 72-7 Closed Systems for Animal Sewage Treatment. Joe T. Clayton, 11 pp., 1971
- No. 23 Charles River: An Urban River in its Changing Social Contexts. John W. Sinton, 110 pp., 1972 (PB-208 810)
- No. 24 Public Service and the Public University: Environmental Problem-Solving and Research. James R. Pease, 200 pp., 1972
- No. 25 Historical, Political and Social Factors Affecting Public Policy on River Diversion: Out-of-Basin Diversion of Connecticut Flood Waters to the Boston Metropolitan Area. Edward R. Kaynor, 56 pp., 1972
- FY 73-1 The Participatory Role of Citizen Advisory Groups in New England Water Resources Planning: A Preliminary Study. Madge O. Ertel, 20 pp., 1972 (PB-218 712)
- FY 73-2 Analysis of Selected, Existing Water Quality Data on the Connecticut River. Alan J. Gross and Jeffrey R. Folts, 39 pp., 1973
- FY 73-3 Significance of Cellulose Production by Planktonic Algae in Lacustrine Environments. Jinnque Rho, John T. Reynolds, and Warren Litsky, 100 pp., 1972
- FY 73-4 **The Limnology of Stockbridge Bowl, Stockbridge, Massachusetts.** Stuart D. Ludlam, Karen S. Hutchison, and G.E. Henderson, 63 pp., 1972
- FY 73-5 **The Origin, Effects and Control of Turbidity in an Urban Recreational Lake.** Carlos Carranza and Stanley M. Bemben, 106 pp., 1973 (PB-220 963)
- FY 73-8 **Determination of Optimal Multiple Uses of a Small Water Resource.** Carl A. Carlozzi, 168 pp., 1973 (PB-222 524)
- FY 73-9 Evaluation of Discontinuities in Regional Population Projections. Jane Wilkie and Everett Lee, 24 pp., 1973 (PB-222 543)
- FY73-10 Attitudes of Riparians Toward Their Lake Environments: A Study of Lake Wyola and Damon Pond, Massachusetts. John H. Martin and Paul L. Wegkamp, 41 pp., 1973 (PB-222 485)
- No. 26 **A Methodology for Planning Optimal Regional Wastewater Management Systems.** Donald Dean Adrian, Bernard B. Berger, Richard J. Giglio, Frank C. Kaminsky, and Robert F. Rikkers, 239 pp., 1973
- No. 27 **Partial Recovery of Vegetation in a Pollution-Damaged Marsh.** C. John Burk, Paul Hosier, Arthur Lowry, Nick Lenz, and Alexander Masrobian, 28 pp., 1973 (PB-226 303)

- No. 28 Formation of Public Policy on Issues of Out-of-Basin Diversion of Connecticut River Flood Waters to Boston Metropolitan Area. Bernard B. Berger, ed., 160 pp., 1973
- No. 29 Attitudes, Values and Perceptions in Water Resources Decision-Making within a Metropolitan Area. Edward R. Kaynor and Irving Howards, 140 pp., 1973
- No. 30 **Model for Landscape Resource Assessment.** Julius Gyula Fabos, 141 pp., 1973 (PB-226 437)
- No. 31 A Guide to Important Characteristics and Values of Freshwater Wetlands in the Northeast. Joseph S. Larson, ed., 35 pp., 1973 (PB-226 075)
- No. 32 Models for Assessment of Freshwater Wetlands. Joseph S. Larson, 91 pp., 1976 (PB-253 950)
- REPRINT A Guide to Important Characteristics and Values of Freshwater Wetlands in the Northeast AND Models for Assessment of Freshwater Wetlands (Reprint of Nos. 31 and 32 in one volume). Joseph S. Larson, ed., 126 pp., 1981
- No. 33 Flood Proofing Decisions Under Uncertainty: An Application to the Connecticut River Basin. Petros Aklilu and Cleve E. Willis, 99 pp., 1974 (PB-228 133)
- No. 34 **Legal Issues in Economic Utilization of the Connecticut River Flood Plain.** Daniel Wilkes, 48 pp., 1973
- No. 35 Institutional Framework Affecting the Use of Inland Wetlands in Massachusetts. Tirath R. Gupta and John H. Foster, 39 pp., 1973 (PB-228 134)
- No. 36 Elements in a Decision Framework for Planning the Allocation of Coastal Land and Water Resources with Illustration for a Coastal Community.

  Roger N. Albee and David A. Storey, 78 pp., 1973
- No. 37 Applications of Linear Time Series Models and Stepwise Regression Models to Selected Water Quality Data on the Connecticut River. Alan J. Gross and Rebecca C. Galkiewicz, 36 pp., 1973
- WRRI-17 Utility Analysis in the Valuation of Extra-Market Benefits with Particular Reference to Water-Based Recreation. J.A. Sinden, 124 pp., 1973
- WRRI-25 A Systematic Evaluation of Environmental Perceptions, Optimum Preferences, and Trade-Off Values in Water Resource Analysis. Dilip Pendse and J.B. Wyckoff, 86 pp., 1974 (PB-236 853)

- No. 38 Preliminary Observations on the Biochemical Cycle of Silica in Stockbridge **Bowl** (Lake). Stuart D. Ludlam, 33 pp., 1974
- No. 39 Dissolved Silica in Laurel Lake: Influx, Uptake and Differential Accumulation During Summer Stratification. Michael Soukup, 67 pp., 1974
- No. 40 Use of Economic-Environmental Input-Output Analysis for Coastal Planning with Illustration for the Cape Cod Region. Dennis M. King and David A. Storey, 73 pp., 1974
- No. 42 Impact of the Cranberry Industry on the Quality of Ground Water in the Cape Cod Area. Karl H. Deubert, 56 pp., 1974
- No. 43 **The Role of Citizen Advisory Groups in Water Resources Planning.** Madge O. Ertel, 141 pp., 1974 (PB-240 877)
- No. 44 **Design and Assembly of an Automatic Hydrologic Data Acquisition System.** Peter N. Turbide, Joseph M. Colonell, and Francis S. Hill, 121 pp., 1974
- No. 45 Flood Plain Land Use Management: An Application of Operations Research Methodology. Joseph F. Smiarowski, Cleve E. Willis, and John H. Foster, 44 pp., 1975
- No. 46 **The Economics of Flood Insurance: An Analysis of the National Flood Insurance Program.** Gregory A. Vaut, 72 pp., 1975
- No. 47 Preliminary Investigation into Copper Cycling in Indian Lake, Massachusetts, a Lake Treated Annually with Copper Sulfate. Karen H. Symmes, 37 pp., 1975
- No. 48 Correspondence Conference on Removal of Nitrogen from Municipal Wastewater. Bernard B. Berger, ed., 463 pp., 1973
- No. 48S SUMMARY: Correspondence Conference on Removal of Nitrogen from Municipal Wastewater. Bernard B. Berger, 18 pp., 1974
- No. 49 Environmental Impact Evaluation in Freshwater Impoundments by Vegetation Analysis of the Terrestrial Ecosystem. Patrick W. Fairbairn and Carl A. Carlozzi, 141 pp., 1975
- No. 50 Characteristics of Urban Runoff in Greenfield, Massachusetts, Phase I. Francis A. DiGiano, Paul L. Heirtzler, and Michael P. Donohue, 102 pp., 1975 (PB-268 984)
- No. 51 Water Usage Study in Communities Served by the Metropolitan District Commission. Water Resources Research Center and Curran Associates, 167 pp., 1975
- No. 52 Proceedings: The Connecticut River System, A Workshop on Research

- Needs and Priorities. Madge O. Ertel, ed., 141 pp., 1975 (PB-268 984)
- No. 53 Modeling the Dynamic Response of Floodplains to Urbanization in Southeastern New England. Donald D. Doehring, Julius Gyula Fabos, and Mark E. Smith, 29 pp., 1975
- No. 54 A Laboratory Investigation of the Effect of Surface Films on Wind Induced Rearation. Donald C. Knudson and Peter A. Mangarella, 99 pp., 1975
- No. 55 **Tritium and Deuterium as Water Tracers in Hydrologic Systems.** Gordon L. Stewart and John R. Stetson, 44 pp., 1975
- No. 56 Evidence of the Presence of Mutagenic Pollutants in the Millers River: Results of a Plant Bioassay System. Edward J. Klekowski, Jr., 54 pp., 1975
- No. 57 A Model of Alewife Migration in the Parker River, Massachusetts, for Simulating an Optimal Anadromous Fish Stock Management Program. George Libey, Charles F. Cole, and James E. Johnson, 25 pp., 1975
- No. 58 **A Review of Statistical Procedures Used for Examination of Water Data**. Alan J. Gross, 16 pp., 1975 (PB-247 104)
- No. 59 Evaluation of Alternative Procedures for Review of Water Resources Research Proposals. Bernard B. Berger and Edward R. Kaynor, 53 pp., 1975
- No. 60 Field Evaluation of a Predictive Model for Thermal Stratification in Lakes and Reservoirs. Joseph M. Colonell, 204 pp., 1976
- No. 61 **A Floodplain Management Framework for Structural and Non-Structural Measures**. Jawahar Lal Kaul, Cleve E. Willis, and John H. Foster, 114 pp., 1975
- No. 62 **Designing a River Basin Sampling System.** Thomas G. Sanders, Donald Dean Adrian, and Bernard B. Berger, 88 pp., 1976 (PB-255 022)
- No. 63 **Quality Variations within a Small Water Distribution System**. Oliver T. Zajicek, 25 pp., 1976
- No. 64 **Proceedings of Seminar Sessions on State Water Supply Planning**. Barry R. Lawson, ed., 234 pp., 1975 (PB-261 885)
- No. 64S **EXECUTIVE SUMMARY: Proceedings of Seminar Sessions on State Water Supply Planning**. Barry R. Lawson, 14 pp., 1975
- No. 65 Evaluation of Proposed Man-Made Ponds for Food Production to Recover Values in Waste Heat and Solid Organic Sludges. John W. Zahradnik, Larry S. Turner, Howard L. Levine, and Charles Tucker, 58 pp., 1976

- No. 66 **Evaluation of Data for Ponds, Lakes and Reservoirs in Massachusetts**. Joseph C. Mawson and Roger J. Reed, 20 pp., 1976 (PB-279 142)
- No. 67 Evaluation and Adaptation of Selected Computer Programs to Water Resource Problems in Massachusetts. Lawrence A. Leland and George R. Higgins, 68 pp., 1975 (PB-255 105)
- No. 68 **Strengthening Lake-Shoreland Management in Massachusetts**. Bernard B. Berger, Jon A. Kusler, and Sally G. Klingener, 21 pp. 1976
- No. 69 **Lake-Shoreland Management Programs: Selected Papers**. Bernard B. Berger, Jon A. Kusler, and Sally G. Klingener, eds., 224 pp., 1976 (PB-269014)
- No. 70 Suitability of New England Soils in Accepting Waste Effluents: Phase I. Donald Dean Adrian, John H. Baker, Chin Shu Chen, Joe T. Clayton, Francis A. DiGiano, Gordon L. Stewart, and Martin E. Weeks, 150 pp., 1976 (PB-269 092)
- No. 71 A Four Year Analysis of Vegetation Following an Oil Spill in a Fresh Water Marsh. C. John Burk, 38 pp., 1976
- No. 72 **Fort River Ecosystem: Productivity of the Periphyton Component**. Stuart G. Fisher and William T. Sumner, 56 pp., 1976
- No. 73 Effectiveness of Information Transfer through Water Resources Researcher/User Group Interaction. Ruth Kreplick and John C. Sawyer, 144 pp., 1976
- No. 74 **A Method for Selecting and Evaluating Simulation Games as Education Tools for Water Resources Planning**. Linda G. Lockwood and Robert F. Powers, 81 pp., 1976
- No. 75 Explaining Variations in Cardiovascular Disease Mortality Within a Soft Water Area. Robert W. Tuthill, 73 pp., 1976
- No. 76 **Workshop Proceedings: Citizen Participation in Water Resources Decision-Making.** Madge O. Ertel and Barry Lawson, 47 pp., 1976 (PB-259 611)
- No. 77 Citizen Participation in Comprehensive Water Resources Planning. Madge O. Ertel and Stuart G. Koch, 103 pp., 1976
- No. 78 Attitudes and Interactions of Citizen Advisory Groups and Governmental Officials in the Water Resources Planning Process. Robert A. Shanley, 103 pp., 1976
- No. 79 **Evaluation of Membranes for Water Pollution Control**. E. Ernest Lindsey and W. Leigh Short, 53 pp., 1976

- No. 80 **The Value of Data Acquisition from Water Quality Monitoring**. Richard J. McAniff and Cleve E. Willis, 104 pp., 1976
- No. 81 A Modeling Approach for Predicting Nutrient Influences on Lakes and Their Watersheds. Sharon A. Bucci, Carl A. Carlozzi, and Gail B. Oakland, 32 pp., 1976.
- No. 82 **River Basin Water Quality Sampling**. Dennis A. Verdi, Christopher C. Clarkson, and Donald Dean Adrian, 110 pp., 1976
- No. 83 Connecticut River Water Resource Decision-Making. Edward R. Kaynor, 393 pp., 1976 (\$11.00)
- Md Ctr1 Characterization of Urban Runoff in the Maryland Suburbs of Washington, D.C. Robert M. Regan and Allan J. Dietemann (Technical Report No. 38 of the University of Maryland Water Resources Research Center), 137 pp., 1976
- Md Ctr2 **Characterization of Urban Runoff**. William Whipple, Jr., Bernard B. Berger, C.D. Gates, R.M. Regan, and C.W. Randall, 22 pp., 1976
- No. 84 Characterization of Urban Runoff, Greenfield, Massachusetts: Phase II. Francis A. DiGiano, Robert A. Coler, Ram C. Dahiya, and Bernard B. Berger, 137 pp., 1977
- No. 85 Effect of an Urban Road System on Lead Content of an Urban Water Supply System. H.M. Widmer, John Markinac, Stephen A. Wilson, with Oliver T. Zajicek, ed., 18 pp., 1977
- No. 86 Suitability of New England Soils in Accepting Waste Effluents: Phase II. Donald Dean Adrian, John H. Baker, Joe T. Clayton, Francis A. DiGiano, Gordon L. Stewart, and Martin Weeks, 134 pp., 1976
- No. 87 A Test of the Effects of Domestic Sewage on the Growth of the Common Blue Mussel, Mytilus edulis, in an Aquacultural System. Jeff Pardo and Robert Coler, 44 pp., 1977
- No. 88 **The Relationship of Lake Quality to Specific Urbanization Stresses**. Haim B. Gunner and Jinnque Rho, 44 pp., 1977
- No. 89 Public Participation in Water Resources Planning: A Case Study and Literature Review. Madge O. Ertel and Stuart G. Koch, 55 pp., 1977
- No. 90 **The Recent History of Productivity in Selected Berkshire Lakes**. Stuart D. Ludlam, 66 pp., 1977
- No. 91 Wastewater Management Planning: Conflict in the Evaluation of Alternatives. Harry E. Schwarz and Bradford M. Stern, 104 pp., 1977

- No. 92 Disposal and Utilization of Hydraulically Dredged Lake Sediments in Limited Containment Areas. James E. Walsh and Stanley M. Bemben, 147 pp., 1977 (PB-285 729)
- No. 93 Oil Spills: The Policy of Prevention and the Strategy of Recovery. Jon M. Conrad, 88 pp., 1977
- Co ctr1 Modeling the Dynamic Response of Floodplains to Urbanization in Eastern New England. Donald O. Doehring and Mark E. Smith, 95 pp., 1978 (PB-285 708)
- No. 94 **The Effects of Elevated Levels of Sodium in Community Drinking Water on Blood Pressure Distribution Patterns**. Edward J. Calabrese and Robert W. Tuthill, 28 pp., 1978
- No. 95 Evaluation of the Effectiveness of an Integrated Water Resources Research Information Transfer Program. Ruth Kreplick, 124 pp., 1978
- No. 96 The Effects of the Use and Regulation of Septic Tank Systems Upon Land Use in Massachusetts. Joseph H. Twichell, 90 pp., 1978
- No. 97 Biological Nitrification and Denitrification Using Rotating Biological Contactors. James C. O'Shaughnessey and Frederic C. Blanc, 103 pp., 1978
- No. 98 Connecticut River Diversion: A Case Study in Water Allocation Policy. Edward R. Kaynor, 220 pp., 1978 (PB-293 785)
- No. 99 Influence of Waste Residuals in Estuarine Waters on Development, Behavior and Survival of Soft-Shell Clam Larvae. Christopher Gledhill, Charles F. Cole, and Christopher Martin, 37 pp., 1978
- No. 100 Ecological Effects of Urban Stormwater Runoff on Benthic Macroinvertebrates Inhabiting the Green River, Massachusetts. Joel M. Pratt and Robert A. Coler, 75 pp., 1979
- No. 101 **Fragmentation of Public Authority over Floodplains: The Charles River Response**. Rutherford H. Platt and George M. McMullen, 112 pp., 1979
- No. 102 **Development of a Modified Tracer Technique for Measuring the Stream Reaeration Rate**. Joseph Michael Kwasnik and Tsuan Hua Feng, 68 pp., 1979
- No. 103 **Development of a Procedure for Field Measurement of River Reaeration Rates**. James Morrison Valentine, Jr. and Tsuan Hua Feng, 93 pp., 1979
- No. 104 Urbanization and Water Quality Planning: The 208 Experience in Massachusetts. Harry E. Schwarz, Branden B. Johnson, Robert J. Caiazzo, and

- Debra E. Pincus, 135 pp., 1979
- No. 105 The Relationship Between Water Depth and Sedimentary Pigment Concentration in Two Holomictic Berkshire Lakes. Stuart D. Ludlam, 30 pp., 1979
- No. 106 The Attitudes of Industry and Public Officials on Industrial Use of Reclaimed Municipal Wastewater Effluent in Massachusetts. Janice Pratte and Warren Litsky, 78 pp., 1979
- No. 107 Identifying and Meeting Training Needs for Public Participation in Water Resources Planning. Madge O. Ertel, 32 pp., 1979
- No. 108 The Development of PALIS: A Ponds and Lakes Information System for Massachusetts. Paul J. Godfrey, Spencer Joyner, Jr., Edward Goldstein, and Linda Ross, 236 pp., 1979
- No. 109 A Rational Approach to Utilization of Carbon Beds in Reducing Microorganic Contamination in Drinking Water. Francis A. DiGiano, William H. Frey, and Charles W. Baxter, 113 pp., 1980
- No. 110 Dam Policy in Massachusetts. Edward R. Kaynor, 95 pp., 1979
- No. 111 **The Detection of Mutagenic Pollutants in Aquatic and Marine Environments: Studies of the Millers River and Boston Harbor**. Edward J. Klekowski and William Barnes, 74 pp., 1979
- No. 112 Analysis of the Water Rate Structure as a Management Option for Water Conservation. James W. Male, Cleve E. Willis, Frederick G. Babin, and Charles J. Shillito, 134 pp., 1979
- No. 113 **Urban Stormwater Pollutant Loadings**. Thomas A. Jewell, Donald Dean Adrian, and Francis A. DiGiano, 186 pp., 1980
- No. 114 Public Attitudes Toward the Recreational Use of Drinking Water Reservoirs in Massachusetts. Lawrence R. Klar, Jr., Walter H. Bumgardner, and Aldo H. Ghirin, 72 pp., 1980
- No. 115 **Post-Flood Recovery and Hazard Mitigation: Lessons from the Massachusetts Coast, February, 1978**. Rutherford H. Platt and George M. McMullen, 101 pp., 1980 (PB-207 517)
- No. 116 Eutrophication Stress in the Littoral Zone Resulting from Shoreland Development. Haim B. Gunner, 62 pp., 1980
- No. 117 Multispectral Remote Sensing as a Freshwater Quality Surveillance Tool.

- Dayton E. Carritt, 57 pp., 1980
- No. 118 **Cost Effective Stream and Effluent Monitoring.** Donald Dean Adrian, Cleve E. Willis, Charles E. Carver, James W. Male, Christopher C. Clarkson, Franklin S. Tirsch, Kevin Moore, and Donald R. Ryan, 94 pp., 1980
- No. 119 Ulva lactuca as a Bioindicator of Coastal Water Quality. Howard G. Levine
- No. 120 Municipal Wells, Land Development and Freshwater Wetlands in Massachusetts. David S. Wilkie and Joseph S. Larson, 32 pp., 1980 (PB-209 132)
- No. 121 **Substitution Possibilities for Water Inputs in Selected Industries**. Frederick G. Babin, Cleve E. Willis, P. Geoffrey Allen, and Andriana S. Vlachou, 114 pp., 1980
- No. 122 Massachusetts' Five-Year Water Reources Research Needs, 1982-1987. Edward L. Goldstein, Joseph S. Larson, and Paul J. Godfrey, 74 pp., 1980 (PB-231 961)
- No. 123 **Geology and Hydrology of Wetlands in Massachusetts**. Ward S. Motts and Arnold O'Brien, 147 pp., 1981 (\$8.00)
- No. 124 Removal of Humic Substances and Turbidity in Water Supply Sources by Polymer Coagulation and Direct Filtration. Francis A. DiGiano, Enrique J. LaMotta, Kenneth B. Black, and Maria C. Zapata-Moreno, 46 pp., 1981
- No. 125 **Low Flows of Massachusetts Streams**. James W. Male and Hisashi Ogawa, 152 pp., 1982
- No. 126 Mutation of Ferns Growing in an Environment Contaminated with Polychlorinated Biphenyls. Edward J. Klekowski, 23 pp., 1982
- No. 127 Use and Limitations of Sedimentary Pigments as Indicators of Past Lake Productivity. Stuart D. Ludlam, 63 pp., 1982
- No. 128 **The Septic Tank as a Wastewater Treatment and Disposal Facility**. Peter L.M. Veneman, 45 pp., 1982
- No. 129 **Microbiological Control of the Aquatic Weed, Myriophyllus spp**. Haim B. Gunner, 25 pp., 1982
- No. 130 A Laboratory/Field Investigation into the Biological Effects of Urban Runoff. Carmen Madeiros and Robert A. Coler, 65 pp., 1982
- No. 131 Control of Haloform Production During Chlorination of Naturally-Occurring Compounds through Pre-ozonation. Lloyd M. Hays, Barbara M. Baum, Russell A. Isaac, and J. Carrell Morris, 44 pp., 1982

- No. 132 Feasibility of Increasing Water Supplies and Preventing Environmental Damage by Artificial Recharge in Massachusetts. Ward S. Motts, ed., 251 pp., 1982
- No. 133 **Valuation of Intangibles: The Case of Water Quality**. Cleve E. Willis, John H. Foster, and Kenneth Sewall, 109 pp., 1983
- No. 134 Characterization and Treatability of the Byproducts of Chlorination of Naturally Occurring Humic Substances. Francis A. DiGiano, Peter C. Uden, Wendy C. Saracen, and Edwin L. Coker, 102 pp., 1983
- No. 135 Effect of Ozonation on the Biodegradability and Adsorbability of Specific Organics to be Removed in the "Biological Activated Carbon (BAC)" Process. Francis A. DiGiano, Sheila F. McShane, and Michael F. Lorenzo, 98 pp., 1983
- No. 136 **Use of Hedonic Price Technique to Evaluate Wetlands**. P. Geoffrey Allen and Thomas H. Stevens, 42 pp., 1983
- No. 137 Flood Loss Reduction Through Interstate Compacts: An Under-Utilized Approach. Rutherford H. Platt and William Nechamen, 146 pp., 1983
- No. 138 **The Flood Mitigation Potential of Inland Wetlands**. Hisashi Ogawa and James W. Male, 164 pp., 1983
- No. 139 An Analytical Model of Contaminant Migration in Shallow Aquifers. David O. Lederer, David W. Ostendorf, Richard R. Noss, and Donald Dean Adrian, 70 pp., 1983
- No. 140 The Role of Fulvic Substances on Trace Metal Partitioning in Natural Aquatic Sediments. Oliver T. Zajicek, 38 pp., 1983
- No. 141 River Basin Water Quality Monitoring Network Design. Franklin S. Tirsch and James W. Male, 197 pp., 1983
- No. 142 **Development of Groundwater on a Retreating Barrier Beach in Relation to Overwash and Dune Formation on Cape Cod, Massachusetts**. Paul Jeffrey Godfrey and Michael Stroman, 43 pp., 1983
- No. 143 Historic and Prehistoric Patterns of Water Use in the Connecticut River Valley: Implications for Water Resources Planning. John R. Cole and Mitchell T. Mulholland, 144 pp., 1983
- No. 144 A Management Model for Determining Acceptable Types and Levels of Recreation at Public Drinking Water Reservoirs. Lawrence R. Klar, Jr., Meir Gross, Peter J. Murphy, Edward M.Mahoney, and Michael S. Switzenbaum, 243 pp., 1983 (\$8.00)

- No. 145 Hydrogeochemical Cycling in a Watershed-Groundwater System: Fort River and Cadwell Creek, Massachusetts. Gail L. Batchelder, Richard F. Yuretich, and Wendy C. Leonard, 80 pp., 1983
- No. 146 Evaluation of the Visibility Criterion of the Massachusetts Sanitary Code for Swimming in Natural Waters. Richard R. Noss and Kirk Hatfield, 41 pp., 1984
- No. 147 **The Massachusetts Acid Rain Monitoring Project: Phase I**. Paul J. Godfrey, Armand Ruby, III, and O.T. Zajecek, 240 pp., 1984 (\$8.00)
- No. 148 Hydrogeology and Processes of Acid Neutralization in Cadwell Creek Watershed, Quabbin Reservation, Massachusetts. Wendy C. Leonard, Richard F. Yuretich, and Susan J. Pohanka, 131 pp., 1985
- No. 149 Biological Neutralization of Acid Deposition in Ombrogenous and Minerotrophic Wetlands. Thomas P. Army and Harold F. Hemond, 47 pp., 1985
- No. 150 Reproductive Failure Due to Environmental pH and Ionic factors in Landlocked Rainbow Smelt (Osmerus mordax). Paul T. Kostecki, Kyle R. Byrne, and Edward J. Calabrese, 30 pp., 1985
- No. 151 Sulfate Retention by Forest Soils of Central New England. John H. Baker, 32 pp., 1986
- No. 152 Hydrogeology and Mineral Weathering Reactions in Watersheds of Central Massachusetts. Richard F. Yuretich, Peter J. Stekl, and Susan J. Pohanka, 85 pp., 1986
- No. 153 **Influence of Vegetative Succession on Soil Chemistry of the Berkshires.** Henry W. Art and David P. Dethier, 174 pp., 1986
- No. 154 **Design of a Drinking Water Quality Monitoring Program.** Paul J. Godfrey, Armand Ruby III, Oliver T. Zajicek, Stephen J. DeFrancesco, Michael Sutherland, James K. Edzwald, and Floyd Taylor, 111 pp., 1986
- No. 155 **Physiological Stress Indicators in Fishes and Their Potential for Application in Field Studies**. Sebastien Belle, Kyle R. Byrne, and Paul T. Kostecki, 59 pp., 1987
- No. 156 **Geographic Information Systems in Water Resources Research**. Mark S. Lindhult, Paul J. Godfrey, Julius G. Fabos, and Meir Gross, 80 pp., 1988
- No. 157 Sensitivity of Surface Waters in Massachusetts: A Listing of the Sensitivity of All Surface Waters Sampled by the Acid Rain Monitoring Project.

  Nicholas Layzer, Marie-Francoise Walk, and Paul J. Godfrey, 107 pp., 1988

- No. 158 Municipal Ground Water Contamination in Massachusetts: The Case for Wellhead Protection in Humid Regions. E.R. Kaynor, 209 pp., 1988. (\$5.00)
- No. 159 **The Massachusetts Acid Rain Monitoring Project, Phase II, Vol. 1**. Armand Ruby III, Paul J. Godfrey, Oliver T. Zajicek, 145 pp., 1988. (\$14.50)
- No. 160 The Study of Humic and Other Naturally Occurring Organic Substances in Water and the Formation Therefrom of Hazardous Chlorinated Compounds. Peter C. Uden, 25 pp., 1988 (\$2.00)
- No. 161 Farmington River Wild and Scenic Study: Assessment of Water Supply Needs of the Greater Hartford Area. Edward R. Kaynor. 70 pp., 1990.
- No. 162 Effects of Land Uses and Hydrogeologic Characteristics on Nitrate and Sodium in Groundwater. William J. Goetz, Carolyn Harper, Cleve E. Willis, John T. Finn. 94 pp., 1991.
- No. 163 Effects of Pond Chemistry on two Synoptic Mole Salamanders, *Ambystoma*, *Jeffersonianum* and *A. Maculatum*, in the Connecticut Valley of Massachusetts. Scott D. Jackson, Curtice R. Griffin. 42 pp., 1991.
- No. 164 Ozone and Acidic Precipitation Effects on Mycorrhizal Formation and Growth of Tree Seedlings. William J. Manning, Stephen Plotkin, Robin Lowenfield, Kevin D. Kean. 41 pp., 1991.
- No. 165 **Production and Transport of Biogenic Volatiles from a Freshwater, Floatingmat Bog**. Thomas P. Army, Harold F. Hemond. 180 pp., 1990.
- No. 166 Impacts of Acid Deposition on Watersheds of the Quabbin Reservoir. Gail Batchelder, Virginia Irvine, et. al. 229pp., 1992
- No. 167 **Denitrification System for Onsite Wastewater Treatment**. Peter L. M. Veneman, Eric S. Winkler, 55pp., 1993.
- No. 168 **The Cost of Water Supply and Its Impact on Decision Making.** James W. Male, John B. Moriarty, Thomas H. Stevens, and Cleve Willis, 91 pp. 1993.
- No. 169 Land Users' Economic Responses to Groundwater Protection Policies. Joseph Iannazzi, Daniel Lass, Elizabeth Mansager, Sanddep Sacheti, and Cleve Willis, 85 pp. 1994
- No. 170 Enhanced Recovery of Gasoline Hydrocarbons by Soil Flushing with Solutions of Dissolved Organic Matter and Nonionic Surfactants. David K. Ryan, John W. Duggan, and Clifford J. Bruell. 148 pp. 1995.
- No. 171 The Massachusetts Acid Rain Monitoring Project: Ten Years of Monitoring

- Massachusetts Lakes and Streams with Volunteers. Paul J. Godfrey, Mark D. Mattson, Marie-Françoise Walk, Peter A. Kerr, O. Thomas Zajicek, and Armand Ruby III, 245 pp., 1996
- No. 172 Effects of Pore Size on the Mobilization of Petroleum Hyddrocarbons by Surfactant Enhanced Soil Flushing. Clifford J. Bruell, David K. Ryan, John W. Duggan, Scott C. Crawford, and Christopher C. Barker, 190 pp. 1997.
- SPEC'L 1 Report of the Citizen Review Committee on the Connecticut River Basin Comprehensive Water and Related Land Resources Investigation. David Harrison, ed., New England River Basins Commission and Water Resources Research Center, 241 pp., 1971
- SPEC'L 2 A Plan to Improve the Water Resources Scientific Information Center **Program.** Bernard B. Berger, John J. Knightly, Leon W. Weinberger, and Conrad A. Wogrin, 54 pp., 1976
- SPEC'L 3 **SAVE WATER, The Amherst Water Conservation Project: Final Report.** Yaffa Grossman, Charles Lucy, Peter Westover, and Paul J. Godfrey (Report to the Massachusetts Department of Environmental Quality Engineering, Division of Water Pollution Control by the Hitchcock Center for the Environment and the Town of Amherst), 149 pp., 1982 (\$5.00)
- SPEC'L 4 **Directory of Massachusetts Water Resources Researchers, 1982**. Massachusetts Water Resources Research Center, 63 pp., 1982
- SPEC'L 5 **The Design and Impacts of a Demonstration in Residential Water Conservation: Greenfield, Massachusetts.** Penelope Kim and Samual Seskin (Report to the Massachusetts Department of Environmental Quality Engineering, Division of Water Pollution Control by the Center for Economic Development, University of Massachusetts School of Business Administration), 59 pp., 1982 (\$5.00)
- SPEC'L 6 **Regional Assessment of Wetlands Regulation Programs in New England**. Edward R. Kaynor, ed., (Report to the U.S. Congress Office of Technology Assessment by the Massachusetts Water Resources Research Center), 229 pp., 1982
- SPEC'L 7 Ecological Considerations in Wetlands Treatment of Municipal Wastewaters. Paul J. Godfrey, Edward R. Kaynor, and Jay Benforado, eds. (Report to the U.S. Fish and Wildlife Service and Environmental Protection Agency by the Massachusetts Water Resources Research Center. Published by Hutchinson and Ross, Inc. Not available through Center.) 745 pp., 1983
- SPEC'L 8 Courses of Study in Water Resources at the University of Massachusetts: A Supplementary Course Catalog compiled by the Water Resources Research Center, University of Massachusetts, 1984 (N/A)

- SPEC'L 9 Directory of Water Resource Researchers in Massachusetts Colleges and Universities, 1984. Massachusetts Water Resources Research Center, 59 pp. (N/A)
- SPEC'L 10 Annual Report October 1983 Sept. 1984 of the Water Resources Research Center, University of Massachusetts. Paul J. Godfrey and Edward R. Kaynor, 30 pp., 1985 (N/A).
- SPEC'L 11 **Fiscal Year 1984 Program Report**. Water Resources Research Center, University of Massachusetts, 26 pp., 1985 (N/A)
- SPEC'L 12 **1986** Directory of Acid Rain Researchers and Research Users in New England. 59 pp., 1987 (No Charge) (N/A)
- SPEC'L 13 **Recent and Ongoing Acid Deposition Research in New England--1986**. Edward R. Kaynor, ed., 56 pp., 1987 (N/A)
- SPEC'L 14 **Results of An Aquatic Toxicology Research in the Northeast**. S. Plotkin and Paul Kostecki. 19 pp., 1987.
- SPEC'L 15 **Directory of Aquatic Toxicology Research in the Northeast**. S. Plotkin and Paul Kostecki. 72 pp., 1987.
- SPEC'L 16 Acid Rain in Massachusetts: The Massachusetts Acid Rain Research Program in Action. Paul Godfrey, Director. 54 pp., Illus. 1988.
- SPEC'L 17 Massachusetts Water Resources Research Center Annual Program Report-1989. Paul Godrey, Director. 38 pp., 1990. (N/A)
- SPEC'L 18 **1990** Directory of Water Resources Researchers in Massachusetts Colleges and University. 124 pp., 1990. (N/A)
- SPEC'L 19 Massachusetts Water Resources Research Center Annual Program Report- 1990. Paul Godfrey, Director. 42 pp., 1991.
- SPEC'L 20 Massachusetts Water Resources Research Center Annual Program Report- 1991. Paul Godfrey, Director. 38 pp., 1991.
- SPEC'L 21 Massachusetts Water Resources Research Center Annual Program Report-1992. Paul Godfrey, Director. 86 pp.,